

Appln No. 10/731,710
Amdt date July 14, 2006
Reply to Office action of April 28, 2006

REMARKS/ARGUMENTS

The above amendments and these remarks are in response to the Office action mailed on April 28, 2006. Claims 1 and 23 have been amended for clarity. Claim 35 has been added and is directed to the subject matter disclosed in the application as originally filed. No new matter has been added. Claims 1-11 and 13-35 are now pending on this application. Reconsideration on the basis of the above amendments and remarks below is kindly requested.

The Examiner rejected claims 1-34 under 35 U.S.C. Section 103(a) as being unpatentable over Jurewicz in view of Bunting et al. According to the Examiner, Jurewicz discloses the invention substantially as claimed, except that Jurewicz is silent as to the material that the sintering apparatus is formed of. Bunting et al., according to the Examiner, teaches enclosing an ultra hard material containing blank in a refractory can. Consequently, the Examiner is of the opinion that it would have been obvious to one of ordinary skill in the art to combine Jurewicz with Bunting et al. to obtain the claimed invention. Applicants respectfully disagree.

Jurewicz discloses diamond-filled compacts. These compacts have a jacket which is filled with a polycrystalline diamond material. The jacket is present in the final product disclosed by Jurewicz. This is evident on column 4, lines 4 and 5 of Jurewicz, where it is stated that "the jacket is not the primary work surface. . ." and on column 5, lines 44-46, where it is stated that "the thickness of the jacket 94 in step 1 is also generally twice as thick as that in the final product" indicating that the jacket is present in the final product. Bunting et al. does not appear to disclose use of a jacket at all.

Claim 1 requires "sintering to convert said ultra hard material feed stock to a solid ultra hard material having a peripheral portion infiltrated by said metallic liner; and removing said peripheral portion". Neither Jurewicz nor Bunting et al. disclose, teach or suggest the step of removing a peripheral portion which is infiltrated by a metallic liner. As such, Applicants submit that Jurewicz and Bunting et al., alone or in combination, cannot render claim 1 obvious.

Claims 2-11, 13-20, 27, 28 and 35 are directly or indirectly dependent from claim 1. Claim 1 is now believed to be in condition for allowance of Jurewicz in view of Bunting et al.

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As such, Applicants submit that claims 2-11, 13-20, 27, 28 and 35 are also in condition for allowance over Jurewicz in view of Bunting et al. as being dependent from a claim allowable over these references and for the additional limitations they contain therein.

Claim 34 requires "sintering to convert said ultra hard material feed stock together with said liner to a solid ultra hard material layer." The jacket disclosed by Jurewicz appears to be separate from the ultra hard material portion, which is surrounded by the jacket. Bunting et al. does not appear to disclose use of a jacket. Consequently, neither Jurewicz nor Bunting et al., disclose, teach or suggest sintering the alleged ultra hard material and the alleged jacket to form a solid ultra hard material layer. As such, Applicants submit that claim 34 is also not rendered obvious by Jurewicz in view of Bunting et al.

Claim 21 requires that "during sintering the liner forms a eutectic having a melting temperature and wherein the substrate forms a eutectic having a melting temperature, wherein the melting temperature of the liner formed eutectic is within 310°C of the substrate formed eutectic." Neither Jurewicz nor Bunting et al. appear to disclose, teach or suggest that during sintering a liner forms a eutectic and that the substrate forms a eutectic, and that the melting temperature of the liner formed eutectic is within 310°C of the substrate form eutectic. As such, Applicants submit that the combination of these two references cannot render claim 21 obvious.

Claim 22 and 29-32 are dependent from claim 21. As such, Applicants submit that claims 22 and 29-32 are also allowable over Jurewicz in view of Bunting et al. for the same reasons as claim 21 and for the additional limitations they contain therein.

Claim 23 requires that "during sintering the liner forms a plastically deformable region for preventing the formation of cracks on the ultra hard material adjacent said plastically deformable region during a cooling phase of said sintering." Neither Jurewicz, nor Bunting et al. appear to disclose a liner which forms a plastically deformable region which prevents the formation of cracks in the ultra hard material adjacent the plastically deformable region during the cooling phase of the sintering. As such, Applicants submit that the combination of these two references cannot render claim 23 obvious.

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Claims 24-26 and 33 are dependent from claim 23. As such, these claims should also be allowable over Jurewicz in view of Bunting et al. for the same reasons as claim 23 and for additional limitations they contain therein.

The rejections to all claims pending in this application are believed to have been overcome and this application is now believed to be conditioned for allowance. Should the Examiner, however, have any remaining questions or concerns about the allowability of this application, the Examiner is kindly requested to call the undersigned attorney to discuss them.

Respectfully submitted,
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